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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/626,400

07/26/2000

Na Li

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02/09/2005

MUNSCH, HARDT, KOPF & HARR, P.C.
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EXAMINER

JAGANNATHAN, MELANIE

ART UNIT

PAPER NUMBER

2666

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/626,400

Applicant(s)

LI ET AL.

Examiner

Melanie Jagannathan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 13-16, 24-26, 30 and 36-40 is/are rejected.
- 7) ☒ Claim(s) 4-6, 8-12, 17-23, 27-29 and 31-35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/15/2000.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 16-23 are rejected under 35 U.S.C. 112, first paragraph, because a single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983).

Claim 16 is a single means claim with single means being a telecommunications equipment, using a method of dynamic resource allocation, for storing resource allocation weighting data associated with class of services, storing weighting data associated with each active connection including class identifier, upper threshold, lower threshold and sequence of data. This was held nonenabling for the scope of claims 16-23 because the specification disclosed at most only those means of the telecommunications equipment known to the inventor. When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claim 16-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 16-23 are directed towards an apparatus or system; however, there is no physical structure such as circuitry or a device to perform the steps of storing as disclosed.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-3, 7, 13-16, 24-26, 30, 36-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Fan et al. US 6,408,005.

Regarding claims 1, 7, 14-15, the claimed method for adaptive resource allocation comprising allocating a resource to each of a plurality of data transmitting active connections belong to more than one class of service is disclosed by dynamic rate control scheduling providing N ATM cell streams, each corresponding to a group of VCs requiring the same QoS, and distributing bandwidth so as to support the guaranteed QoS. See column 3, lines 6-17, column 5, lines 38-59. column 9, lines 18-50. The claimed determining a lender class of service for each active connection from which resources may be reallocated to active connection is disclosed by dynamic rate control is provided which ensures the guaranteed QoS and also distributes unused bandwidth among active streams. See column 3, lies 6-17, column 5, lines

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54-67, column 6, lines 1-19. The claimed periodically comparing resource usage of an active connection to an upper and lower threshold is disclosed by if stream does not make full use of their minimum rate guarantee, their input rate is less than their minimum rate guarantee, they contribute to a pool of excess bandwidth. See column 8, lines 12-17, 63-67, column 9, lines 1-9 and column 11. The claimed borrowing resources from the lender class of service for active connection in response to current usage exceeding upper threshold is disclosed by streams which transmit in excess of their minimum rates have the excess bandwidth made available to them. See column 8, lines 12-17, columns 10-11. The claimed returning resources to lender class of service from active connection in response to current usage being less than lower threshold is disclosed by stream's input rate is less than their minimum rate guarantee than the excess bandwidth goes into pool of available bandwidth. See column 8, lines 12-17, columns 10-11, column 19, lines 48-57.

Regarding claims 2-3, the claimed periodically comparing the resource usage comprises comparing the resource usage of active connection in response to receiving incoming data/cell is disclosed by length of queue used in calculations for excess bandwidth. See column 10, lines 57-67, column 11, lines 20-55.

Regarding claim 13, the claimed scheduling resources using a weighted round robin method is disclosed by excess bandwidth can be shared by WRR. See column 2, lines 48-57.

Examiner will treat claims 16-23 as to mirror method claims 1-15. Subsequently, Examiner uses same rationale as above for rejection of claim 16.

Regarding claims 24, 30, 37-40, the claimed assigning a total weight to each class of service and assigning a weight to each of a plurality of data transmitting active connections in

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each class of services is disclosed by distribution of excess bandwidth by static weights according to traffic class, each class weight may be multiplied by the number of active virtual channels belonging to a given class to achieve fairness and dynamic weights determined according to quality of service. See column 8, lines 63-67, column 9, lines 1-9. The claimed determining a lender class of service for each active connection from which resources may be reallocated to active connection is disclosed by dynamic rate control is provided which ensures the guaranteed QoS and also distributes unused bandwidth among active streams. See column 3, lines 6-17, column 5, lines 54-67, column 6, lines 1-19. The claimed periodically comparing resource usage of an active connection to an upper and lower threshold is disclosed by if stream does not make full use of their minimum rate guarantee, their input rate is less than their minimum rate guarantee, they contribute to a pool of excess bandwidth. See column 8, lines 12-17, 63-67, column 9, lines 1-9 and column 11. The claimed borrowing resources from the lender class of service for active connection in response to current usage exceeding upper threshold is disclosed by streams which transmit in excess of their minimum rates have the excess bandwidth made available to them. See column 8, lines 12-17, columns 10-11. The claimed returning resources to lender class of service from active connection in response to current usage being less than lower threshold is disclosed by stream's input rate is less than their minimum rate guarantee than the excess bandwidth goes into pool of available bandwidth. See column 8, lines 12-17, columns 10-11, column 19, lines 48-57.

Regarding claims 25-26, the claimed periodically comparing the resource usage comprises comparing the resource usage of active connection in response to receiving incoming

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data/cell is disclosed by length of queue used in calculations for excess bandwidth. See column 10, lines 57-67, column 11, lines 20-55.

Regarding claim 36, the claimed scheduling resources using a weighted round robin method is disclosed by excess bandwidth can be shared by WRR. See column 2, lines 48-57.

Allowable Subject Matter

7. Claims 4-6,8-12, 17-23, 27-29, 31-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Prior art of record does not disclose, in single or in combination, the claimed limitations of recording a time of last resource reallocation action when resource was borrowed or returned, comparing a current time with the last resource reallocation action time and proceeding or not proceeding to borrowing, proceeding if the difference between current time and last time being greater than a predetermined minimum time spacing requirement and not proceeding if difference being less than or equal to predetermined minimum time spacing, storing an enable indicative of whether resource reallocation is permitted for active connection, a lender class identifier indicative of class of service that resources are borrowed from.

Response to Arguments

8. Applicant's arguments regarding claims 1-40 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tse-Au US 6,816,456 discloses network use optimization.

Baker et al. US 6,775,231 disclose dynamic weighted resource sharing.

Hughes et al. US 6,526,060 disclose dynamic rate-based, weighted fair scheduler.

Duffield et al. US 6,452,933 discloses fair queuing system with adaptive bandwidth redistribution.

Tzeng US 6,438,135 discloses dynamic weighted round robin queuing.

Gilbert et al. US 6,771,595 disclose dynamic resource allocation in network environment.

Howard US 6,683,884 discloses shared credit round robin queuing.

Joffe US 6,014,367 discloses weighted fair queuing for ATM cell scheduling.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Jagannathan whose telephone number is 571-272-3163.


The examiner can normally be reached Monday-Friday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3163.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJ 


FRANK DUONG
PRIMARY EXAMINER